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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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QM61/0609

EXAMINER
ATKINSON, C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 3743 | |

DATE MAILED: 06/09/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks



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12

DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

- ☒ Responsive to communication(s) filed on 5/24/99 and 4/16/99
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-12 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-12 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

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Response to Amendment

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

Claims 3-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 3-4, the recitation "the heat radiator" lacks antecedence. Regarding claim 5, the recitation "an element" is indefinite since "an element" has previously been recited and it is unclear if applicant is claiming an additional element or if applicant failed to provide proper antecedence. Regarding claim 6, the recitations "one cooler" and "another cooled" are indefinite. The remaining claim is included due to dependency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

Claims 1-5 are rejected under 35 U.S.C. § 103 as being unpatentable over Tajima in view of Sugata.

The patent of Tajima in Figures 1 and 4 discloses the claimed invention with the exception of the ends being closed.

The document of Sugata in Figures 1-4 discloses that it is known to have a U-shaped profile heat pipe (1) having closed ends and parallel fins/plates (18) for the purpose of cooling a heat generating device (52). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Tajima, a U-shaped profile heat pipe having closed ends for the purpose of cooling a heat generating device as disclosed in Sugata. The remaining limitations are considered to be clearly met.

Claims 6-7 are rejected under 35 U.S.C. § 103 as being unpatentable over Tajima in view of Sugata as applied to claims 1-5 above, and further in view of August. The patent of Tajima as modified, discloses all the claimed features of the invention with the exception of the a connector comprising a hook portion and a hook engaging portion.

The patent of August in Figures 1 and 3 discloses a heat radiator comprised of a plurality of horizontally oriented, vertically extending heat radiating plates (40), where a plurality of heat

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pipes (18), disposed in a row, passes through the heat radiating plates (40) and a connector comprising a hook portion (25) and a hook engaging portion (26) for the purpose of compactly connecting together a plurality of heat pipe type cooling devices. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Tajima as modified, a connector comprising a hook portion and a hook engaging portion for the purpose of compactly connecting together a plurality of heat pipe type cooling devices as disclosed in August.

Claims 8-10 are rejected under 35 U.S.C. § 103 as being unpatentable over Tajima in view of Sugata as applied to claims 1-5 above, and further in view of Ishida et al. ('790). The patent of Tajima as modified, discloses all the claimed features of the invention with the exception of a plurality of heat pipes connected to the heat receiver and the plurality of fins/plates being horizontally extending and vertically spaced.

The document of Ishida et al. ('790) in Figures 1 and 5 discloses that it is known to have a plurality of U-shaped heat pipes (32) connected to a heat receiver (31) and a plurality of fins/plates (13) being horizontally extending and vertically spaced for the purpose of cooling heat generating elements. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Tajima as modified, a plurality of U-shaped heat pipes connected to the heat receiver and the plurality of fins/plates being horizontally extending and vertically spaced for the purpose of cooling the heat generating elements as disclosed in Ishida et al. ('790).

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Claims 11-12 are rejected under 35 U.S.C. § 103 as being unpatentable over Tajima in view of Sugata as applied to claims 1-5 above, and further in view of Ishida et al. ('790) as applied to claims 8-10 above, and further in view of Kunsagi et al. The patent of Tajima as modified, discloses all the claimed features of the invention with the exception of a ventilation duct surrounding the heat radiator and having an inlet and an outlet and a fan interposed between preselected heat pipes.

The patent of Kunsagi et al. in Figure 3 discloses a heat radiator comprised of a plurality of horizontally oriented, vertically extending heat radiating plates (51), where heat pipes (50) pass through the heat radiating plates (51); a ventilation duct (30) surrounding the heat radiator and having an inlet (44) and an outlet (56) and a fan (52) interposed between preselected heat pipes (50) for the purpose of removing heat from the heat pipes (50). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Tajima as modified, a ventilation duct surrounding the heat radiator and having an inlet and an outlet and a fan interposed between preselected heat pipes for the purpose of removing heat from the heat pipes as disclosed in Kunsagi et al.

Response to Arguments

Sugata in Figures 1-4 discloses that it is known to have a U-shaped profile heat pipe (1) having closed ends and parallel fins/plates (18) for the purpose of cooling a heat generating device.

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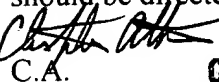
Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Atkinson whose telephone number is (703) 308-2603.


C.A.

June 7, 1999

CHRISTOPHER ATKINSON
PATENT EXAMINER